

De
said sidewall surfaces adjoining said block upper and lower surfaces, each of said first and second sidewall surfaces comprising a first part and a second part, said sidewall surface first parts extending from said block front surface towards said block back surface, and intersecting the front surface at an angle of ninety degrees or less, said sidewall surface second parts joining their respective sidewall surface first parts and said block back surface, each sidewall surface second part intersecting the back surface at an angle of less than ninety degrees; and

b) a flange extending downwardly from the block lower surface, said flange comprising a setback surface and a locking surface, said setback surface extending from the lower rear edge of the flange towards said block front surface to adjoin said flange locking surface, said locking surface extending below the plane of said block lower surface.

231. (New) The block of claim ~~30~~ wherein the flange includes a rear surface which is an extension of the block back surface.

332. (New) The block of claim ~~30~~ further including one or more cores extending vertically through the block body.

333. (New) The block of claim ~~32~~ wherein the one or more cores extend from the lower surface of the block partially through the block body.

334. (New) The block of claim ~~33~~ wherein the cores extend from about 60% to about 80% of the block height.

335. (New) ~~The block of claim 30 wherein the sidewall surfaces are generally solid.~~

36. (New) The block of claim 35 wherein the sidewall surfaces include one or more notches.

37. (New) A retaining wall block suitable for use in forming a mortarless retaining wall, said block comprising:

- a) a pair of substantially parallel and planar upper and lower faces;
- b) a front face joining the upper and lower faces, which is substantially perpendicular to the upper and lower faces;
- c) a rear face which is substantially perpendicular to the upper and lower faces;
- d) a pair of side faces joining the front and rear faces, the side faces being substantially perpendicular to the upper and lower faces, and including rearwardly converging portions, wherein a line drawn on the upper face through the points where the rearwardly

converging portions begin is substantially parallel to a line drawn through the points where the side faces join the rear face; and

3 e) a flange extending below the lower face of the block, said flange further including a front locking surface which intersects the lower face of the block;

f) wherein the upper face is substantially solid and continuous throughout its extent; and

g) wherein the area of the upper face is greater than the area of the lower face.

~~38. (New) The block of claim 37 wherein the side faces include one or more notches.~~

10 39. (New) The block of claim 37 wherein the depth of the block is the distance between the midpoint of the front face and the midpoint of the rear face, wherein the depth of the flange is the distance between the front locking surface of the flange and the rear surface of the flange, and wherein the ratio of the depth of the block to the depth of the flange is at least about 6:1.

11 40. (New) The block of claim 39 wherein the ratio is at least about 10:1.

12 41. (New) The block of claim 37 wherein the front face of the block is substantially planar.

13 42. (New) The block of claim 37 wherein the front face of the block is nonplanar.

14 43. (New) The block of claim 42 wherein the front face of the block is faceted.

15 44. (New) The block of claim 42 wherein the front face of the block is curved.

16 45. (New) The block of claim 39 wherein said flange spans between said side faces.

17 46. (New) The block of claim 37 wherein the rear face of the block includes a substantially planar portion which is parallel to the line drawn through the points where the side faces join the rear face of the block.

18 47. (New) The block of claim 46 wherein the front locking surface of the flange includes a substantially planar portion which is substantially parallel to the substantially planar portion of the rear face of the block.

19 48. (New) The block of claim 47 wherein each side face further includes a forwardly converging portion that intersects the front face at an angle of less than 90 degrees.

20 49. (New) The block of claim 48 wherein the rearwardly converging side face portions each intersect the rear face at an angle of less than 90 degrees.

²¹
~~50.~~ (New) The block of claim ~~49~~²⁰ wherein the rearwardly converging side face portions each intersect the rear face at an angle between about 30 degrees and about 60 degrees.

²³
~~51.~~ (New) The block of claim ~~50~~²⁴ wherein the ratio of the front-to-back depth of the block to the depth of the flange is at least about 6:1.

²³
~~52.~~ (New) The block of claim ~~51~~²² wherein said flange has a rear face which is substantially an extension of the rear face of the block.

²⁴
~~53.~~ (New) A retaining wall comprising stacked courses of the block of claim ~~30~~¹ in which the front faces of the blocks combine to form a decorative face of the retaining wall, and wherein the lower face of each block in a succeeding course is placed over the upper faces of the blocks in the next lower course, with the downwardly-extending flanges of each block in a succeeding course being positioned immediately behind the uppermost portions of the rear faces of the blocks in the next lower course.

~~54.~~ (New) A retaining wall comprising stacked courses of the block of claim 37 in which the front faces of the blocks combine to form a decorative face of the retaining wall, and wherein the lower face of each block in a succeeding course is placed over the upper faces of the blocks in the next lower course, with the downwardly-extending flanges of each block in a succeeding course being positioned immediately behind the uppermost portions of the rear faces of the blocks in the next lower course.

²⁵
~~55.~~ (New) The retaining wall of claim ~~54~~²⁵, comprising a first course and an adjacently positioned upper second course.

²⁶
~~56.~~ (New) The retaining wall of claim ~~55~~²⁶, wherein said retaining wall has a set back from said first course to said second course.

²⁷
~~57.~~ (New) The retaining wall of claim ~~56~~²⁷, wherein said retaining wall set back ranges from about 1 to 2 inches from said first course to said second course.

²⁸
~~58.~~ (New) The retaining wall of claim ~~57~~²⁸, wherein said retaining wall comprises a supporting matrix positioned between said first course and said second course.

²⁸
~~59.~~ (New) A composite masonry block suitable for use in forming straight and serpentine retaining walls having a set back from course to course, said block comprising:

a) a block body and an integral locator lip formed in a mold with generally vertical sidewalls, an open top and an open bottom seated upon a generally horizontal flat pallet, by a process comprising the steps of:

- i) filling the mold via its open top with a masonry block mix comprising sand, aggregate, and cement;
- ii) vibrating the masonry block mix within the filled mold;
- iii) compacting the masonry block mix within the mold by the action of a compression head pushed down on the masonry block mix through the open top of the mold, whereby the masonry block mix forms an uncured unit having the shape imparted to it by the mold, the pallet on which the mold rests, and the compression head;
- iv) stripping the uncured unit from the mold via the open bottom of the mold by the combined, relative vertical action of the compression head and the pallet with respect to the mold, whereby, after stripping, the uncured unit rests on the pallet unsupported by the mold;
- v) transporting the uncured unit to a curing location;
- vi) curing the uncured unit at the curing location to create a cured unit;

b) said block body comprising:

- i) a generally horizontal upper surface;
- ii) a generally horizontal lower surface having a smaller gross area than that of the upper surface;
- iii) a generally vertical front surface;
- iv) a generally vertical back surface, said front and back surfaces being separated by a distance comprising the depth of the block;
- v) a generally vertical first sidewall extending from the front surface to the rear surface, and extending from the upper surface to the lower surface, said first sidewall including a first part that extends away from the front surface at an external angle of less than ninety degrees with respect to the front surface, and a generally planar second part that lies between the sidewall first part and the back surface, and intersects the back surface at an external angle of less than 90 degrees; and
- vi) a generally vertical second sidewall opposed to the first sidewall, and extending from the front surface to the back surface, and extending from the upper surface to the

lower surface, said second sidewall including a first part that extends away from the front surface at an external angle of less than 90 degrees with respect to the front surface, and a generally planar second part that joins the sidewall first part and the back surface, and intersects the back surface at an external angle of less than 90 degrees;

vii) said block body upper surface being formed by the pallet upon which the mold seats during the molding process, and being substantially planar, substantially solid, and substantially continuous across its whole extent from its intersections with the front surface, the back surface, and each sidewall as a result;

viii) said block body lower surface being formed by the compression head during the molding process;

ix) the second parts of the block body sidewalls being formed by the corresponding vertical walls of the mold during the molding process;

x) said block body back surface being formed by corresponding vertical walls of the mold during the molding process;

m c) said integral locator lip being formed on the lower surface of the block body and adjacent to the back surface of the block body, and a forwardly facing locking surface which extends below the lower surface of the block body, the depth of said locator lip being the distance between its locking surface and its back surface measured in the plane of the lower surface of the block body, and wherein the ratio of the depth of the block body to the depth of the locator lip is at least about 6:1;

i) wherein the locking surface is formed by a corresponding surface of the compression head during the molding process.

60. (New) The composite masonry block of claim 59 wherein the block body lower surface is formed by the compression head and one or more core forms in the mold.

61. (New) The composite masonry block of claim 59 wherein the locator lip is formed by a corresponding surface of the compression head during the molding process, and includes a back surface which is an extension of the back surface of the block body.

62. (New) The composite masonry block of claim 59 wherein the cured unit is transported to a splitting station, and the block body front surface is formed by the action of one or more splitter blades which are oriented generally perpendicularly to the upper and lower

surfaces of the block body when the cured unit is at the splitting location, and, as a consequence, said block body front surface is irregular, but generally rectangular and generally planar within the limits of the splitting process to produce such a surface.

63. (New) The composite masonry block of claim 62 wherein the block body sidewall first parts are formed by the action of one or more splitter blades which are oriented generally perpendicularly to the upper and lower surfaces of the block body when the cured unit is at the splitting location, and, as a consequence, said sidewall first parts are irregular, but generally rectangular and generally planar within the limits of the splitting process to produce such a surface.

64. (New) The composite masonry block of claim 59 wherein the sidewall first parts intersect the sidewall second parts at a distance from the front surface equal to between about one fifth and about one quarter of the depth of the block body.

65. (New) The composite masonry block of claim 59 wherein the locator lip is continuous, and extends substantially from sidewall to sidewall.

66. (New) The composite masonry block of claim 59 wherein the vertical mold surfaces corresponding to the block body sidewalls comprise one or more substantially vertical flanges, and the block body side walls include a corresponding number of substantially vertical grooves as a consequence of the molding process.

67. (New) A composite masonry block suitable for landscape applications, comprising:

- a) a solid and generally planar top face;
- b) a bottom face which is generally parallel to the top face;
- c) a rear face which is generally perpendicular to the top and bottom faces;
- d) a front face which is generally perpendicular to the top and bottom faces, and which includes opposed portions located at opposite sides of the front face which are generally perpendicular to the top and bottom faces and which diverge as they extend towards the rear face of the block;
- e) opposed side faces, each of said side faces extending from an opposed diverging portion of the front face to the rear face, said side faces converging as they extend towards the rear face;

De f) a lower rear locator lip formed integrally with the bottom face of the block, and located adjacent to the rear face of the block, so that the lip is adapted to establish a uniform setback from course to course when a plurality of like blocks are laid in course.

31/68 (New) The block of claim 30 wherein the opposed diverging portions of the front face are generally planar.

32/69 (New) The block of claim 30 wherein the rear face is generally planar.

33/70 (New) The block of claim 30 wherein the opposed side faces are generally perpendicular to the top and bottom faces, and are generally solid.

34/71 (New) The block of claim 67 wherein at least one of the opposed side faces includes at least one notch.

35/72 (New) The block of claim 30 wherein, the lower rear locator lip comprises a rear face which is an extension of the block rear face below the bottom face of the block.

36/73 (New) A concrete block suitable for constructing straight and curved retaining walls without pins or mortar, and capable of being mass produced by automated block-making machines, said block consisting essentially of:

a) a block body having a generally horizontal and substantially planar upper surface and a generally horizontal and substantially planar lower surface, said upper surface and said lower surface being substantially parallel to each other and separated by a vertical distance which is the height of the block;

b) said block body having a generally vertical first front surface and a generally vertical back surface, said first front surface and said back surface being substantially parallel to each other and generally perpendicular to said upper and lower surfaces of said block, said first front and back surfaces being separated by a horizontal distance comprising the depth of the block;

c) a flange or lip integrally formed with the block and extending downwardly from the lower surface of the block adjacent the intersection of the lower surface of the block with the back surface of the block to a point below the lower surface of the block, said flange comprising a lower setback surface and a forward-facing locking surface;

d) said lower surface having a smaller surface area for block-to-block contact than the surface area of said upper surface, said smaller surface area being the result of the formation of the flange on the lower surface;

e) said block having generally vertical two-part left and right sidewall surfaces, each of said left and right sidewall surfaces comprising a substantially planar first or front part and a substantially planar second or rear part, said first parts having surfaces which do not diverge relative to each other in the direction of said block front surface, and said second or rear parts having surfaces which converge in the direction of said block back surface; and

f) the top surface of said block being substantially solid and continuous across its entire extent.

~~37~~ (New) The block of claim ~~73~~ wherein each of said front parts of said side surfaces converges toward the first front face, said front parts of said side surfaces functioning as additional front faces for the block.

~~38~~ (New) The block of claim ~~73~~ wherein each of said front parts of said side surfaces is a split face and wherein the first front face of the block is also a split face.

~~39~~ (New) The block of claim ~~73~~ wherein each of said front parts of said side surfaces is substantially perpendicular to the first front face.

~~40~~ (New) The block of any of claims ~~73-76~~ wherein the rearwardly converging side surfaces each intersect the back surface of the block at an angle between about 30 degrees and about 60 degrees.

~~41~~ (New) The block of claim ~~73~~ wherein the ratio of the front-to-back depth of the block to the depth of the flange is at least about 6: 1.

~~42~~ (New) The block of claim ~~73~~ wherein the rear face of the flange is an extension of the back surface of the block.

~~43~~ (New) A composite masonry block suitable for landscape applications, comprising:

- a) a solid and generally planar top face;
- b) a bottom face which is generally parallel to the top face;
- c) a rear face which is generally perpendicular to the top and bottom faces;